

REMARKS

This Amendment is filed in response to the Office Action mailed on October 21, 2004. All objections and rejections are respectfully traversed.

Claims 1-21 are in the case.

Claims 1, 2, 5, 7, 11, 12, 13, 16, and 18 were amended to better claim the invention.

Claims 22-32 were add to better claim the invention.

At Paragraphs 2 and 3 of the Office Action, claims 1, 2 and 17 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Thekkath et al. U. S. Patent No. 6,173,293 issued January 9, 2001 (hereinafter Thekkath).

The presently claimed invention, as set forth in representative Claim 1, comprises in part:

1. (Original) A method for generating a backup of a database, the method comprising the steps of:

preparing the database for backup by rendering the database coherent so that the database can be restored without loss of data; and
creating a snapshot of a file system, the file system comprising files including the database and associated log files while the file system is active and available for access by users.

Thekkath discloses a file system which uses a virtual disk, where the virtual disk is supported by one or more physical disks. During ordinary operation pointers are saved in inodes to point to data of the virtual disk, where the data is stored on various physical disks. Backups of the data of the file system are saved as full dumps, for example of the virtual disk, including the data and the pointers, and such a full dump is referred to as a “snapshot” by Thekkath. “The snapshot copy appears identical to an ordinary virtual disk, except that it cannot be modified, i.e., the snapshot is identified as read-only” (Col. 13 lines 11-13). Also, Thekkath includes his log files in the snapshot as: “The snapshot will include all the logs, so the snapshot can be restored by copying it back to a new virtual disk, and running recovery on each log.” (Col. 13 lines 19-21)

Applicant respectfully urges that Thekkath is legally precluded from anticipating the presently claimed invention under 35 U.S.C. § 102(b) because Thekkath has no disclosure of Applicant’s claimed novel *preparing the database for backup by rendering the database coherent*. Thekkath simply saves his log files when doing a backup, and does not do as Applicant claimed novel *preparing the database for backup by rendering the database coherent*.

Further, as Thekkath states “The snapshot will include all the logs, so the snapshot can be restored by copying it back to a new virtual disk, and running recovery on

each log.” (Col. 13 lines 19-21), and therefore Thekkath is silent concerning Applicant’s claimed novel *preparing the database for backup by rendering the database coherent*.

Still further, Applicant respectfully urges that Thekkath is legally precluded from anticipating the presently claimed invention under 35 U.S.C. § 102(b) because of the absence from the disclosure of Thekkath of Applicant’s claimed novel *creating a snapshot of a file system, the file system comprising files including the database and associated log files while the file system is active and available for access by users*.

Particularly, Applicant defines a “snapshot” as saving the pointers to data, not all of the data as defined by the cited Thekkath patent. In the present Specification, the nature of a snapshot is disclosed with reference to Fig. 6A, 6B, and 6C in the Specification Page 14 lines 17-27, which state:

Fig. 6a shows an exemplary root inode 602 of an active file system 600 linking four inodes 605. Note that the active file system would include additional data structures and blocks (not shown) such as a file system information block defining the root of the active file system. In accordance with the illustrative embodiment, the active file system 600 includes a root inode linking to the various inodes 605 that contain the data associated with a file or directory. In Fig. 6b a conventional snapshot 610 has been taken of the root inode 602. As can be seen, the snapshot 610 includes a link to each of the inodes 605. Fig. 6c shows the snapshotted root inode after data inode D has been modified into D’. Thus, the snapshot 610 provides links to data inodes A-D, which represent the state of the data at the time of the snapshot. The root inode 602 which now represents the modified root inode, links to unmodified data inodes A-C and the modified inode D’.

(Specification Page 14 lines 17-27)

Accordingly, Applicant respectfully urges that Thekkath has no disclosure of Applicant's claimed saving of a snapshot, where in the vocabulary of the present patent application, a snapshot is created by saving only the pointers to data.

Again, Applicant respectfully urges that Thekkath discloses saving his data as a "full dump", including both the data and the pointers. Applicant claims saving a snapshot, which is only saving the pointers to the data.

Applicant points out that both the cited Thekkath patent and Applicant's Specification define a "snapshot" differently. Further, Thekkath has no disclosure of saving a snapshot in accordance with Applicant's definition of a snapshot, that is saving the pointers to the data.

Further, Applicant respectfully notes that Thekkath cannot write all of his data to a full dump *while the file system is active and available for access by users*, as it is ordinarily necessary to shut down access to a file while all of the data is being transferred in a full dump. Accordingly, Thekkath has no disclosure of Applicant's claimed novel creating a snapshot *while the file system is active and available for access by users*. An important difference is that Applicant claims saving the pointers, and Thekkath discloses

performing a full dump, and in a full dump both his pointers and his complete data set are saved.

Accordingly, Applicant respectfully urges that Thekkath is legally precluded from anticipating under 35 U.S.C. § 102(b) Applicant's presently claimed novel invention, both because of the absence from Thekkath of Applicant's claimed novel *preparing the database for backup by rendering the database coherent*, and also because of the absence from Thekkath of Applicant's claimed novel *creating a snapshot of a file system, the file system comprising files including the database and associated log files while the file system is active and available for access by users*.

At Paragraphs 4 and 5 of the Office Action Claims 3, 4, 6, 8-11, 14, and 18-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Thekkath in view of Ohran U. S. Patent No. 5,835, 953 issued November 10, 1998 (hereinafter Ohran).

The present invention, as set forth by representative claim 4, comprises in part:

4. A method for generating a point-in-time restoration of a set of database files and a set of associated log files to an active file system, the method comprising the steps of:

selecting, by a user, a backup to restore therefrom, the backup comprising a snapshot of a file system including the set of database files and copies of the associated log files;
verifying the selected backup for coherency;

copying, in response to the backup being coherent, the snapshot of the set of database files to the active file system; and
copying, in response to the backup being coherent, the copies of the associated log files to the active file system.

Ohran discloses a file system and method for backing up his file system. Ohran uses another definition of snapshot:

“In order to preserve the original data of the primary mass storage device during the backup process, a static snapshot of the primary mass storage device is taken. This static snapshot captures the changes that have been made to the primary mass storage device and that need to be transferred to the backup system.”

(Ohran Col. 5 lines 62-67)

Ohran discloses creating a backup by first copying the primary data storage devices at a first point in time, and then backing up at a later time point only those data blocks of the primary storage device which have changed.

Applicant respectfully urges that Ohran is silent concerning Applicant's claimed novel *copying, in response to the backup being coherent, the snapshot of the set of database files to the active file system.*

Again, Applicant's snapshot is created by saving pointers to Applicant's data.

Applicant respectfully urges that Ohran has no disclosure of Applicant's creating snapshots of only pointers to Applicant's data.

Further, Applicant respectfully urges that neither Thekkath nor Ohran has any disclosure of Applicant's claimed novel *creating a snapshot of a file system comprising files including the database and associated log files while the file system is active and available for access by users*.

Even further, Applicant respectfully urges that Thekkath, by storing full dumps and not disclosing making the file system coherent, and Ohran by simply copying changes to the data, will lead a person of ordinary skill in the art of file system architecture and design astray. The person of ordinary skill in the art will be lead astray because if either or both of Thekkath and Ohran are followed, the person will miss Applicant's claimed novel *preparing the database for backup by rendering the database coherent*, and will miss Applicant's claimed novel use of a *snapshot* formed by saving pointers to the data of the file system, and will miss Applicant's claimed novel creating a *snapshot* of the coherent file system and not simply saving changes to the data.

Still further, Applicant's claimed novel invention first *preparing the database for backup by rendering the database coherent* creates a file system having coherent pointers, and then saves the pointers as a *snapshot*. The disclosures of Thekkath and Ohran,

when combined, cannot achieve Applicant's claimed novel creating a *coherent* file system, and then saving the pointers of his *coherent* file system as a *snapshot*.

Accordingly, Applicant respectfully urges that neither Thekkath nor Ohran, taken either singly or in combination, are legally sufficient to render the presently claimed invention unpatentable under 35 U.S.C. § 103(a) because of the absence from both cited patents of Applicant's claimed novel invention of first *preparing the database for backup by rendering the database coherent* which creates a file system having coherent pointers, and then saving the pointers as a *snapshot*.

At Paragraph 6 of the Office Action Claims 5, 7, 12, 13, 15, and 16 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Thekkath in view of Ohran and further in view of Lewis et al. published U. S. Patent Application U.S. 2002/0083037 (hereinafter Lewis).

Applicant respectfully notes that Claims 5, 7, 12, 13, 15, and 16 are all dependent claims, and that they are dependent claims which are believed to be in condition for allowance. Accordingly, the dependent claims are believed to be in condition for allowance.

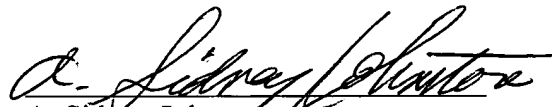
All independent claims are believed to be in condition for allowance.

All dependent claims are dependent from independent claims which are believed to be in condition for allowance. Accordingly, all dependent claims are believed to be in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "A. Sidney Johnston", written over a horizontal line.

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